CLAIMS

I claim:

1. An injection spraying system comprising:

a water tank having an inlet and an outlet;

a check valve means to prevent back flow to said water tank, said check valve means having a hinged flap closing against a valve seat and being positioned within said outlet of said water tank;

a mixing globe fixedly attached to said outlet of said water tank, said check valve means being interposed between said water tank and said mixing globe, wherein said mixing globe has a cylindrical shape; and wherein flow of water and additives therein is tangential;

a pump means for pressurizing water to be sprayed, said pump means having an inlet pipe and an output conduit; said inlet pipe being in fluid connection with said outlet of said water tank and said output conduit being in fluid connection with said unloader chamber means;

a worm gear means for reducing revolutions in said pump means to one revolution of an injector bank drive shaft for each gallon of water pumped by said pump means, said injector bank drive shaft being connected to said worm gear means and extending therefrom;

a clutch means for regulating injection of additives attached to said worm gear means;

a plurality of injection chambers connected to said clutch means and having said injector bank drive shaft extending therethrough, each injection chamber comprising:

a dipper chamber; and

a float valve chamber in fluid connection with said dipper chamber, wherein each injection chamber connects to a common injection conduit;

a plurality of additive storage tank means for supplying additives respectively to each float valve chamber, said plurality of additive storage tank means being removably connected to each float valve chamber by an additive delivery means for maintaining additives in each float valve chamber; and

an unloader chamber means for controlling leakage during spraying connected to said outlet of said pump means, having a fluid by-pass conduit in fluid connection with said outlet of said water tank between said check valve means and said mixing globe and an unloader valve connecting to a pulse cushion and a discharge hose.

2. The injection spraying system as claimed in Claim 1, wherein said unloader chamber means is further comprised of:

a pressure adjusting screw having two cam levers;

a pressure setting cylinder having a top end engaging a terminal end of said pressure adjusting screw;

a spring longitudinally aligned with the cylinder and having a piston extending therethrough; and

a pressure valve contacting an end of said piston and in fluid connection with a cylinder valve of said pressure setting cylinder, said pressure valve connecting to said output conduit from said pump means;

wherein said unloader check valve and said check valve means are closed in a water tight seal and pressure is maintained in said pulse cushion and said discharge hose when fluid passes back into said outlet of said water tank.

3. The injection spraying system as claimed in Claim 1, wherein said clutch means is hydraulicly operated to disengage said plurality of injection chambers when said unloader check valve and said check valve means are closed.

4. The injection spraying system of Claim 1, wherein said dipping chamber of each injection chamber is comprised of a plurality of dipper arms radially mounted on said injector bank drive shaft and a trough means in a respective interior of said dipping chamber for collecting additives from said plurality of dipper arms as said plurality of dipper arms rotate around said injector bank drive shaft; wherein said trough means of each injection chamber is in fluid connection with said common injection conduit.

5. The injection spraying system of Claim 4, wherein each dipper arm has a scoop at an end thereof with a specific volume.

6. The injection spraying system of Claim 1, further comprising a metering gong comprised of a circular cam fixedly mounted on said injector bank drive shaft, a spring loaded striker extending radially from said circular cam, and a steel gong positioned within a rotational radius of an end of said spring-loaded striker such that said spring loaded striker contacts said steel gong upon completion of a full rotation around said injector bank drive shaft.

7. The injection spraying system of Claim 1, further comprising a revolution counter means for visually displaying an amount of gallons of fluid pumped according to revolutions of said injector

bank drive shaft, said revolution counter means being fixedly connected on said injector bank drive shaft.

8. A method of injection spraying comprising:

pumping water from a water tank through a check valve into a mixing globe through an outlet of said water tank by a positive displacement pump;

reducing revolutions in said positive displacement pump to one revolution of an injector bank drive shaft for each gallon of water pumped by said pump means;

controlling injection of additives by engaging or disengaging rotation of said injector bank drive through a plurality of injection chambers by a clutch, each injection chamber being comprised of a float valve chamber and a dipper chamber;

supplying additives to said plurality of injection chambers by connecting additive storage tanks to a respective float valve chamber of each injection chamber;

metering additives for injection by rotating said injector bank drive shaft through said dipper chamber of each injection chamber such that a dipper arm, with a scooping end and mounted on said injector bank drive shaft, is filled with a specific volume of additives in said dipper chamber and such that said dipper arm spills the additives into a trough, said trough of each injection chamber being connected to a common injection conduit;

controlling flow of water from said outlet of said water tank and additives from said common injection conduit into said mixing globe; and

pumping a mixture of water with a set amount of additives from said mixing globe through an unloader chamber to a pulse cushion and a discharge hose, said pulse cushion reducing turbulence of flow of said mixture; and

spraying said mixture from said discharge hose.

9. The method of Claim 8, wherein an additive in one of said plurality of additive storage tanks is fertilizer.

10. The method of Claim 8, further comprising:

removably attaching a plurality of additive storage tanks to said float valve chamber of each injection chamber, and

calibrating said dipper chamber of each injection chamber for set amounts of additives to be filled in a respective dipper chamber of each injection chamber.

11. The method of Claim 8, further comprising:

attaching said trough of each injection chamber to said common injection conduit.

12. The method of Claim 8, said step of controlling flow of water from said outlet of said water tank and additives from said common injection conduit into said mixing globe further comprising:

rotating either of said two cam levers of said pressure adjusting screw in said unloader chamber to set a pressure level within said pressure setting cylinder by lowering said spring against said pressure valve;

increasing fluid pressure from said output conduit of said pump against said pressure valve to overcome said spring, wherein said cylinder valve of said pressure setting cylinder releases fluid to said pressure valve to trigger said pressure valve to open said fluid by-pass conduit from said unloader chamber to said outlet of said water tank and said mixing globe,

closing said check valve by dropping pressure between said pump and said unloader chamber and closing said unloader check valve by dropping pressure between said pulse cushion and said discharge hose and said pump; and

disengaging said plurality of injection chambers when said unloader check valve and said check valve means are closed.